

ABSTRACT

NANOFIBER CONTAINING COMPOSITE STRUCTURES

A composite liquid filtration platform including a composite filtration medium featuring an electrospun polymeric nanofiber layer collected on a porous membrane. When in use, the porous membrane acts as a prefilter used upstream from the polymeric nanofiber layer to remove particles from a liquid stream flowing through the composite filtration structure. The nanofiber layer, positioned downstream from the porous membrane, is used as the retentive layer for critical filtration to provide biosafety assurance, and is responsible for capturing microorganisms like bacteria, mycoplasma or viruses. The composite liquid filtration platform provided herein exhibits permeability advantages over conventional porous membranes or nanofiber mats spun on coarse non-wovens.

(Fig. 8)